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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,118	06/07/2005	Yoshito Hashimoto	70404.62/ok	8790
54/072 7590 01/26/2010 SHARP KABUSHIKI KAISHA C/O KEATING & BENNETT, LLP 1800 Alexander Bell Drive SUITE 200 Reston, VA 20191				
EXAMINER				
HON, SOW FUN				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
01/26/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/538,118

Applicant(s)

HASHIMOTO ET AL.

Examiner

SOPHIE HON

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/13/09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,7-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,7-9 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/22)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Response to Amendment

Withdrawn Rejections

1. The 35 U.S.C. 102(b) and 35 U.S.C. 103(a) rejections of claims 1, 6-10 over Menzer as the primary reference, are withdrawn due to Applicant's amendment dated 11/13/09.

New Rejections

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. Claims 1, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Samec (US 5,763,054) in view of Menzer (US 3,137,601).

Regarding claim 1, Samec teaches a plastic substrate for use in optical elements (anti-reflection coating on an optical element includes one or more layers of a woven plastic mesh material, abstract), where optical elements are commonly used in optical instruments, comprising: a composite substrate in which fibers are arranged to extend in two nearly orthogonal directions within a plane of the composite substrate (Fig. 4 shown on the next page), wherein the composite substrate substantially transmits radiation within the electromagnetic wavelength range of interest (layers of woven mesh material secured to the surface of the optical element, for example by a material that is

transparent to the electromagnetic wavelength of interest, column 3, lines 10-20) which is usually the visible range since the element is an optical one, and the composite substrate is made from woven plastic materials that are substantially transparent to visible radiation (suitable for use for the anti-reflection coating, such as polyester, nylon, column 3, lines 35-40) and is arranged as a quarter-wave plate (anti-reflection coating also simulates a quarter-wave reflective layer by way of waffle-like pattern as illustrated in Fig. 4, column 3, lines 10-15).



FIG. 4

Samec fails to teach that the fibers are embedded in a resin matrix.

However, Samec teaches that the fibers can be in the form of woven polyester or nylon (column 3, lines 35-40) and that they can be held in place with a transparent material (also, column 3, lines 60-62).

Menzer teaches that woven polyester or nylon (column 2, lines 5-10) can be in the form of fibers embedded in a resin matrix (resin employed in the impregnation of the fiber sheets, should be substantially transparent, column 2, lines 24-30), for the purpose of providing the desired strength (firm and strong sheet, column 1, lines 15-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have embedded the fibers of the composite substrate of Samec, in a resin matrix, in order to hold the fibers in place and to obtain a plastic composite substrate with the desired strength, as taught by Menzer.

Regarding claim 7, Samec teaches that the fibers are in the form of a woven fabric (mesh material, abstract).

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Samec in view of Menzer as applied to claims 1, 7 above, and further in view of Babb (US 5,730,922).

Samec, as modified by Menzer, teaches the plastic substrate comprising the composite substrate, as described above. Samec, as modified by Menzer, fails to teach a protective coating on at least one principal surface of the composite substrate.

However, Babbs teaches a composite layer in which fibers (woven fibers, synthetic fibers, column 2, lines 35-40) are embedded in a resin matrix (column 2, lines 44-45). Babbs teaches that the composite substrate further comprises a coating on at least one principal surface of the composite substrate (layer of polymer added to improve at least one property, column 2, lines 23-26) for the purpose of providing protection from moisture and scratches (resistance, column 2, lines 25-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided a protective coating on at least one principal surface of the composite substrate of Samec, as modified by Menzer, in order to obtain the desired scratch resistance and moisture resistance, as taught by Babbs.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Samec in view of Menzer as applied to claims 1, 7 above, and further in view of Speakman (US 6,503,831).

Samec, as modified by Menzer, teaches the plastic substrate comprising the composite substrate, as described above. Samec, as modified by Menzer, fails to teach that the plastic substrate is used as a substrate in a liquid crystal display device comprising a liquid crystal layer.

However, Samec teaches that the plastic substrate is used in optical elements (abstract) and is arranged as a quarter-wave plate (anti-reflection coating also simulates a quarter-wave reflective layer by way of waffle-like pattern as illustrated in Fig. 4, column 3, lines 10-15). An optical element comprising a quarter-wave plate is commonly used in an optical display device such as a liquid crystal display device, for the purpose of utilizing its optical properties.

Speakman teaches a liquid crystal display device (column 25, line 10) which display medium is a liquid crystal layer by definition. Speakman teaches that a typical substrate for the device comprises a composite substrate in which fibers are embedded in a resin matrix (fiber-reinforced epoxy resin sheet, column 45, lines 37-40), for the purpose of utilizing its physical properties.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used the plastic substrate of Samec, as modified by Menzer, as a substrate of a liquid crystal display device, as taught by Speakman, in order to provide a suitable substrate with the desired physical properties which include the optical properties taught by Samec.

Allowable Subject Matter

5. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 7-9 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample, can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sophie Hon/

Sow-Fun Hon
Examiner, Art Unit 1794

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